



TO-220-3L Plastic-Encapsulate Diode

SBD20120TCTB SCHOTTKY BARRIER RECTIFIER

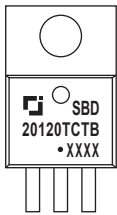
MAIN CHARACTERISTICS

I_o	20 (2×10) A
V_{RRM}	120 V
T_j	150 °C
$V_{F(typ)}$	0.66V (@Tj=125°C)

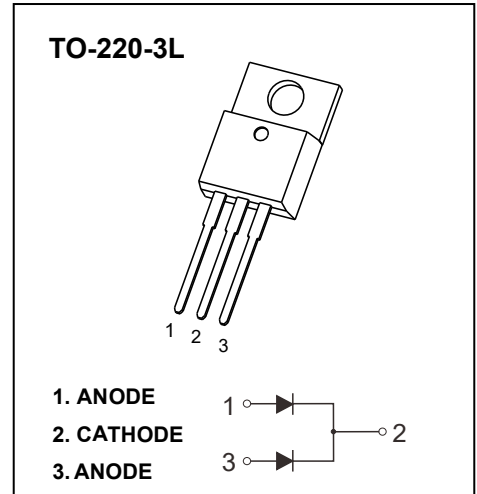
FEATURES

- Low Power Loss,High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop

MARKING



SBD20120TCTB= Device code
 Solid dot = Green molding compound device
 if none, the normal device
 XXXX= Code



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Unit
V_{RRM}	Peak repetitive reverse voltage	120	V
V_{RWM}	Working peak reverse voltage		
V_R	DC blocking voltage		
$V_{R(RMS)}$	RMS reverse voltage	84	V
I_o	Average rectified output current	20	A
I_{FSM}	Non-Repetitive peak forward surge current (8.3ms half sine wave)	200	A
$R_{\theta JC}$	Thermal resistance from junction to case	1.5	°C/W
$R_{\theta JA}$	Thermal resistance from junction to ambient	70	°C/W
T_j	Junction temperature	150	°C
T_{stg}	Storage temperature	-55~+150	°C

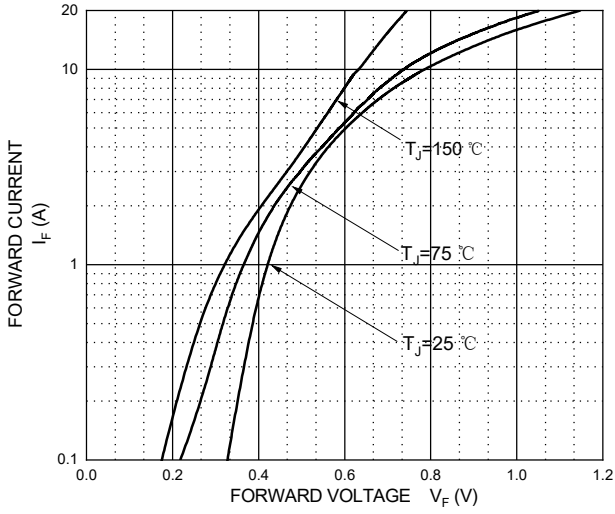
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse voltage	$V_{(BR)}$	$I_R=1\text{mA}$	120			V
Reverse current	I_R	$V_R=120\text{V}$	$T_j = 25^\circ\text{C}$	5.0	100	uA
			$T_j = 125^\circ\text{C}$	5.0		mA
Forward voltage	V_F	$I_F=5\text{A}$	$T_j = 25^\circ\text{C}$	0.60		V
			$T_j = 125^\circ\text{C}$	0.56		V
		$I_F=10\text{A}$	$T_j = 25^\circ\text{C}$	0.78	0.81	V
			$T_j = 125^\circ\text{C}$	0.66		V

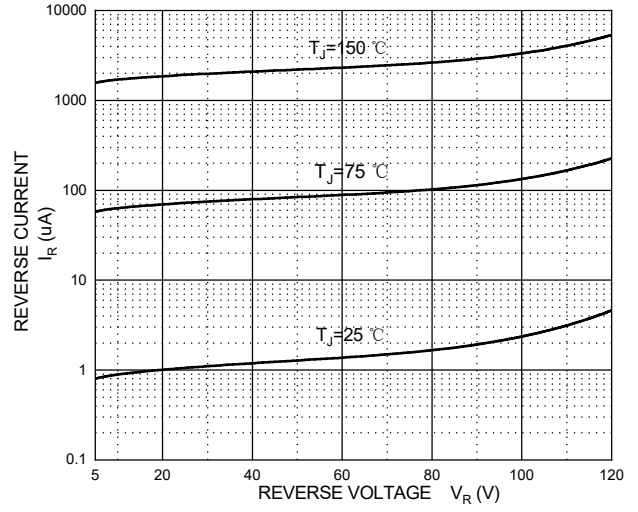
*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2.0\%$.

Typical Characteristics

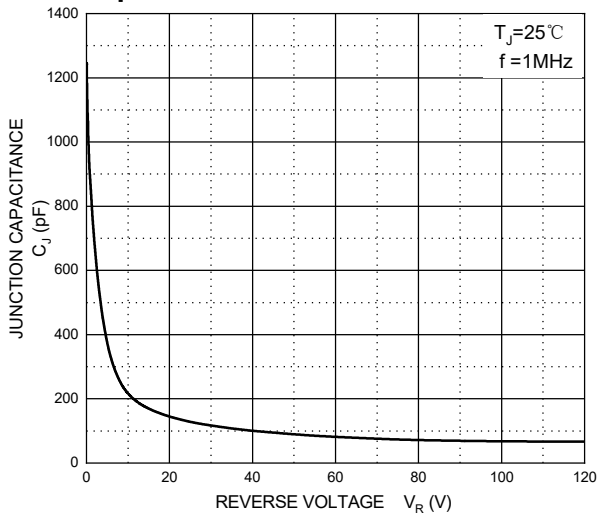
Forward Characteristics



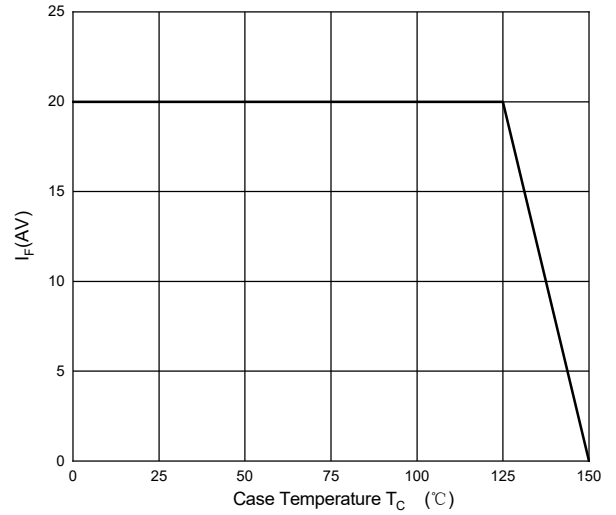
Reverse Characteristics



Capacitance Characteristics Per Diode



FORWARD CURRENT DERATING CURVE



TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.450	4.750	0.175	0.187
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.300	0.500	0.012	0.020
c1	1.170	1.370	0.046	0.054
D	9.830	10.330	0.387	0.407
E	8.500	8.900	0.335	0.350
E1	12.050	12.650	0.474	0.498
e	2.540 TYP		0.100 TYP	
e1	4.900	5.200	0.192	0.205
F	2.540	2.940	0.100	0.116
h	0.100 TYP		0.004 TYP	
L	13.300	13.800	0.523	0.543
L1	3.540	3.940	0.139	0.155
Φ	3.735	3.935	0.147	0.155